analyzed in a second HPLC run (red (lower) chromatogram). The chromatograms of the two runs were then overlayed.

REMARKS

With a view toward furthering prosecution, the current drawings have been replaced with the Substitute Drawings (sheets 1-12) attached hereto as Exhibit 3. Figures 2-5, 7 and 8 have been reformatted to correct the sizes of the margins in order to conform to the requirements of 37 CFR §1.84(g). Figures 6-8 have been amended to remove the descriptive text objected to by the draftsperson to conform to the requirements of 37 CFR §1.84(o).

We note that in accordance with 37 CFR § 1.121(d) and MPEP § 608.02(q), a Transmittal of Proposed Drawing Correction with attached corrected drawings is being submitted concurrently herewith.

The Specification has been amended to incorporate the text canceled from the respective figures. Support for these amendments is found in Figures 6-8 as originally filed.

It is submitted that no new matter has been introduced by the foregoing amendments. Approval and entry of the amendments respectfully is requested.

In the Notice, the PTO also required submission of an executed Declaration and the appropriate surcharge pursuant to 37 CFR § 1.16(l). Accordingly, submitted herewith as Exhibit 1 is an executed Declaration. A check in the amount of $130.00 is also enclosed to cover the surcharge.

In view of the foregoing, entry of and approval of the amendments, and passage of the application to an Art Unit for action on the merits, respectfully, is requested. If the PTO has any questions regarding this paper, please contact the undersigned attorney.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Box Missing Parts, Commissioner For Patents, Washington, D.C. 20231, on September 30, 2002.

Gonzalo Merino

Respectfully submitted,

By: _____

Gonzalo Merino
Registration No. 51,192
BRYAN CAVE LLP
245 Park Avenue
New York, NY 10167-0034
(212) 692-1800

Exhibit 4

"Marked Up" Amendments to Specification Pursuant to Rule 1.121(b)

On page 1, replace paragraphs **[0023]** - **[0025]** with the following paragraphs:

[0023] Figure 6 shows a 10% polyacrylamide gel with two fractions of *E. coli* expressed β,β-carotene 15,15'-monooxygenase after affinity tag purification. Lanes 1 and 2 show two fractions eluted from a Co^{2+}-chelate column showing the main band at 60 kD. **[**In lanes 1 and 2 two different fractions were loaded and lane**]** Lane 3 is a low range molecular weight marker (Bio Rad).

[0024] Figure 7 shows an HPLC analysis of an activity test of β,β-carotene 15,15'-monooxygenase which was cloned and expressed in *E. coli*. The HPLC profile is of the reaction mixture at the end of an activity assay for the β,β-carotene 15,15'-monooxygenase following the procedure in Example 1. The first peak in the chromatogram represents the internal standard, while the second peak corresponds to retinal as the only product formed during the central cleavage with β-carotene as substrate.

[0025] Figure 8 is a chromatogram demonstrating that the peak from Fig. 7 representing the only product of the enzymatic cleaving is retinal. A sample which was positive in the activity assay (green (upper) chromatogram) was spiked with retinal and analyzed in a second HPLC run (red (lower) chromatogram). The chromatograms of the two runs were then overlayed.